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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/575,263	04/10/2006	Motoyuki Kataoka	KATAOKA3	8893

1444 7590 07/26/2007

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EXAMINER	
STOICA, ELLY GERALD	

ART UNIT	PAPER NUMBER
1647	

MAIL DATE	DELIVERY MODE
07/26/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/575,263	KATAOKA ET AL.	
	Examiner	Art Unit	
	Elly-Gerald Stoica	1647	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *09/25/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of the claims

1. Claims 1-10 are pending and are examined.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-7 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for renal repairing/regenerating agent for ischemic injury, does not reasonably provide enablement for treating a renal disease, renal failure or nephropathy. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims.

The factors considered when determining if the disclosure satisfies the enablement requirement and whether any necessary experimentation is "undue" include, but are not limited to:

1) nature of the invention, 2) state of the prior art, 3) relative skill of those in the art, 4) level of predictability in the art, 5) existence of working examples, 6) breadth of claims, 7) amount of direction or guidance by the inventor, and 8) quantity of experimentation needed to make or use the invention. In re Wands, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988).

The claims are drawn to a therapeutic agent for a renal disease containing a colony-stimulating factor (CSF) as an active ingredient, wherein the colony-stimulating factor is granulocyte colony- stimulating factor (G-CSF). The renal disease is chronic or acute renal failure or nephropathy. The nephropathy is either a diabetic or atherosclerotic nephropathy. The prior art at the time that the invention was made was aware of the use of granulocyte colony stimulating factor for stimulation of impaired neutrophils function in patients with chronic renal failure (Saeki et al. - Jpn. J. Nephrol. 38, 585-594, 1996-cited by Applicant) or in patients with end stage renal failure (Shishido et al., - Nichijinshi, 33, 973-981, 1991 -cited by Applicant). However, none of the treatments were intended to treat renal failure or nephropathies *per se*. The studies were geared to remedy the some of the consequences of the disease. Moreover, a study performed by Togel et al. (J Am. Soc. Nephrol. 15, 1261-1267, 2004, -cited by Applicant) to detect if the mobilization of stem cells from the bone marrow by G-CSF would improve renal function in mice with acute renal function surprisingly found that the effect was actually damaging to the renal tissue. The severity of the renal failure and mortality was increased. Togel et al. conclude by strongly arguing against the clinical use of the G-CSF for the prevention or treatment of renal failure. The working example presented in the instant Application presents evidence of improving the tubular damage and thyroidization in a mouse model of ligation/reperfusion renal artery model only. Due to the incertitude present in the art at the time that the invention was made, the lack of guidance and working examples with regard to treating renal disease or renal failure

and not the consequences of renal disease, the amount of experimentation needed to use the invention commensurate with the breadth of the claims is considered undue.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Hanes et al. (U. S. Pat. 5,855,913). Hanes et al. teach a therapeutic agent for local delivery within the lung, such as agents for the treatment of asthma, emphysema, or cystic fibrosis, or for systemic treatment which include, granulocyte colony-stimulating factor (col. 10, lines 37-49). All the biological properties that are intrinsic to the G-CSF structure are present irrespective of the intended use. Therefore the therapeutic agent of the instant application was anticipated by Hanes et al.

Claims 1-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Shishido et al. (Nichijinshi, 33, 973-981, 1991 -cited by Applicant).

A therapeutic agent's properties are inherent to its function and the activity of the agent does not stop because the use was not an intended use. Correspondingly, Shishido et al treated end-stage renal failure patients with human recombinant G-CSF and found it an effective and safe therapeutic agent for neutropenia and neutrophils

dysfunction inpatients with renal failure (Abstract). Therefore, all the consequences of the G-CSF treatment were necessarily achieved and thus the claims are anticipated by Shishido et al.

5. Claim 1-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Pierce et al (U.S. Pat. 6,689, 351). Pierce et al. teach a therapeutic agent administered by the parenteral route containing recombinant proteins like G-CSF. Such parenteral administration of the polypeptides enables the stimulation and proliferation of cell types involved in wound healing and may thus constitute appropriate treatment in such situations (col.6, lines 17-26). The type of cells present at a wound site would necessarily include types of cells that are present in the renal tissue (i.e., epithelial cells, fibroblasts, endothelial cells and blood cells). Therefore the claims are anticipated by Pierce et al.

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1, 2, 8, 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Fukuda et al. (US 20040019184)

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Fukuda et al. teaches a G-CSF therapeutic agent applicable as a remedy for ischemic renal disease ([0017]) and thus anticipates the claims 1, 2, 8, 9.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 1-3, 5-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bruder et al. (U. S. Pat. 6,355,239, 03/12/2002) in view of Bonnem et al. (U.S. Pat. 5, 679, 356, 10/21/1997) and in further view of Nicholls AJ (Diabetic Medicine, 19, 889-894, 2002).

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

The claims are drawn to a renal tissue repairing/regenerating agent containing a colony-stimulating factor (CSF) as an active ingredient or to a method for proliferating or regenerating renal tissue or a cell present in renal tissue by contacting G-CSF with the renal tissue or the cell present in renal tissue.

Bruder et al. teach the use of engineered allogeneic human mesenchymal stem cells (i.e., human mesenchymal stem cells transduced with genetic material of interest) in treating anemia, which is commonly present in chronic disease and often associated with chronic renal failure (e.g., in hemodialysis patients). In this case, human mesenchymal stem cells having incorporated in them a gene encoding erythropoietin would correct the anemia by stimulating the bone marrow to increase erythropoiesis (i.e. production of red blood cells). Other encoded cytokines can be G -CSF or GM –CSF (col. 10, lines 12-23). Allogeneic human mesenchymal stem or progenitor cells find use

in: (1) regenerating mesenchymal tissues which have been damaged through acute injury, abnormal genetic expression or acquired disease; (2) treating a host with damaged mesenchymal tissue by treatment of damaged tissue with allogeneic mesenchymal stem cells combined with a biocompatible carrier suitable for delivering mesenchymal stem cells to the damaged tissues site(s); (3) producing various mesenchymal tissues (col3 line 40-59). Bruder et al do not specifically teach the use of the protein *per se*. Bonnem et al. teach co-administration of GM -CSF and hepatitis vaccine would be capable of restoring immunologic responsiveness to patients with renal failure who had been previously unresponsive to hepatitis vaccination with good results (example 1). Nichols et al. presents the impact of atherosclerotic renovascular disease on diabetic renal failure (p. 889, right col., last paragraph to p. 892).

It would have been obvious for a person of ordinary skill in the art at the time that the invention was made to have used the successful results of Bonnem et al. to device a treatment procedure guided by the teachings of Bruder et al., with a reasonable expectation of success. The motivation to do so would have been offered by the close interdependence between the renovascular disease and renal failure as evidenced by Nicholls et al.

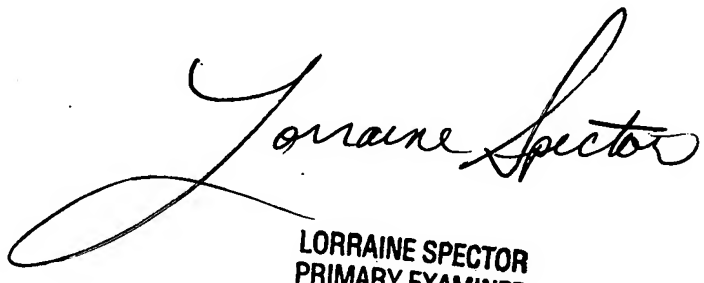
Conclusion

10. No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elly-Gerald Stoica whose telephone number is (571) 272-9941. The examiner can normally be reached on 8:30-17:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary B. Nickol can be reached on (571) 272-0835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



LORRAINE SPECTOR
PRIMARY EXAMINER